# Correlation between serum ferritin and luteinizing hormone in thalassemia children in Dr. Soetomo Hospital

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**Abstract**

**Background:** Iron overload in thalassemia children caused due to multiple transfusion and suboptimal chelating agents. The anterior pituitary is particularly sensitive to iron overload which disrupts hormonal secretion, leading to gonadal dysfunction. Delayed puberty and impaired fertility can impact quality of life in thalassemia patients.

**Objective:** To analyze correlation between serum ferritin and luteinizing hormone in beta-thalassemia children in Dr. Soetomo hospital.

**Methods:** Cross sectional study was done on May – September 2017, We examined 56 children, females aged 8-18 years and male aged 9-18 years old. Forty seven patient were included, 9 patients were excluded, because of severe malnutrition, delayed puberty and turner syndrome; sex maturity was assessed using tanner stage by pediatric endocrinology consultant. Luteinizing hormone and serum ferritin level were performed for each patient. Data was analyzed by analytical descriptive method.

**Results:** Median of the serum feritin was 3154.9 (519-6647.5) ug/L. Short stature was found in 29 of 48 patients, 37 patients had moderate malnutrition. Twenty-six patients had attained puberty, 2 of them still had low luteinizing hormone level. Median luteinizing hormone was 0.3 (0.00-11.06) U/L. None of the patient who had low LH level attained puberty clinically.

**Conclusion:** In this study, serum ferritin had correlation with luteinizing hormone level. Compared to normal children, puberty in beta-thalassemic patients might be late puberty. Gonadal and hormonal examination shoud be done regularly.

**Keywords** : Serum ferritin, luteinizing hormone, beta thalassemia, tanner stage